

17. (Once Amended) The metal recovery culture of claim 14, wherein the concentration of nickel in the above-ground tissues is at least 2.5% based on the gross dry weight of the above ground tissues.

### **REMARKS**

Claims 1-10 and 13-17 are pending. Claims 1-10 and 13-17 are rejected. Claims 13-14 and 16-17 are amended. Support for the amendments can be found throughout the application, for instance at pages 2-3 and 7-8 of the specification and in the claims as originally filed. No new matter is added. Applicants respectfully request reconsideration and withdrawal of all rejections.

### **Claim Rejections - 35 U.S.C. 112**

Claims 13 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. It is alleged that in claim 13, the term "genus" should be replaced with -- species--. Applicants respectfully disagree. Applicants point out that the claim language is technically correct, since *Alyssum* is a genus, while the listed plants are species (See e.g., page 452, lines 1-2, of the cited Morrison et al. reference). Indeed, claim 1, which has never been rejected in this regard, recites, in part, "a nickel hyperaccumulating plant selected from the genera *Alyssum* on said soil . . . ." It is noted that this language is quite similar to the language of claim 13. Applicants therefore urge that the claims are clear and definite.

### **Claim Rejections - 35 U.S.C. 102/103**

Claims 13-14 and 16-17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over each of Morrison et al., Brooks et al. or Homer et al. Applicants respectfully urge that this rejection is moot in view of the claim amendments indicated herein. Claims 13-14 and 16-17 refer to a metal recovery culture, the culture comprising a hyperaccumulating plant and a soil, as claimed, wherein the plant is cultivated in the soil. Applicants note that the specification at pages 2-3 and 7-8 clearly refers to metal recovery cultures, that is, the cultivation of hyperaccumulating plants in soil for the recovery of metal.

Applicants also point out that none of the cited references refer to any metal recovery culture including a soil with a particular calcium concentration, much less a concentration of calcium in the soil from about 0.128 mM to about 5 mM, as claimed. In fact, only Homer et al. appears to mention the addition of appropriate amounts of 10% calcium nitrate (See page 197, left column), but still clearly contains no teaching or suggestion with respect to any soil calcium concentration as claimed. Therefore, in that the cited references are unable to teach or suggest each and every claim element, Applicants urge withdrawal of the rejection.

Claims 1-10 and 13-17 are rejected under 35 U.S.C. 103(a) as obvious over Chaney et al. (U.S. Patent No. 5,711,784). Applicants respectfully point out that this rejection is moot, as Applicants file herewith a duly executed Terminal Disclaimer, with respect to the Chaney et al. patent.

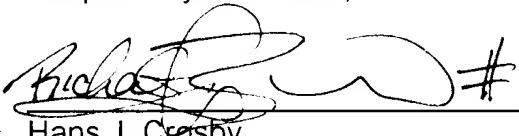
### Double Patenting

Claims 1-10 and 13-17 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of Chaney et al. (U.S. Patent No. 5,711,784). Applicants respectfully point out that this rejection is moot in light of the duly executed terminal disclaimer submitted herein. Applicants urge withdrawal of the rejection.

In view of the amendments and remarks above, Applicants respectfully request favorable action with respect to the application.

In the event this paper is not timely filed, Applicants hereby petition for an appropriate extension of time. The fee for this extension may be charged to our Deposit Account No. 01-2300, along with any other additional fees which may be required with respect to this paper referencing Attorney Docket No. 108172-09005.

Respectfully submitted,

  
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Enclosure: Marked-Up Copy of Claims

### MARKED-UP COPY OF CLAIMS

13. (Twice Amended) A metal recovery culture, said culture comprising a nickel hyperaccumulating plant of the *Alyssum* genus selected from the group consisting of *A. murale*, *A. pintodasilvae*, *A. malacitanum*, *A. lesbiacum*, *A. fallacinum*, *A. argenteum*, *A. tenium* and *A. heldreichii*, having a concentration of nickel in its above-ground tissues of over 1000 mg per kg gross dry weight of the above-ground tissues, and [wherein the plant is produced by a method comprising at least the following step:]

[growing the plant in] a soil, wherein [maintained under soil conditions such that] the concentration of calcium in the soil is from about 0.128 mM to about 5 mM and the pH is below about 7.0 until such time that the concentration of nickel in the above-ground tissues is over 1000 mg per kg gross dry weight of the above-ground tissues, wherein the plant is cultivated in the soil.

14. (Twice Amended) A metal recovery culture, said culture comprising a nickel hyperaccumulating plant of the *Alyssum* genus having (1) a concentration of nickel in its above-ground tissues of over 1000 mg per kg gross dry weight of the above-ground tissues, and (2) a concentration in its above-ground tissues of at least one other metal selected from the group consisting of Co, Pd, Rh, Ru, Pt, Ir, Os and Re, and [wherein the plant is produced by a method comprising at least the following step:]

[growing the plant in] a soil, wherein [maintained under soil conditions such that] the concentration of calcium in the soil is from about 0.128 mM to about 5 mM and the pH is below about 7.0 until such time that the concentration of nickel in the above-

ground tissues is over 1000 mg per kg gross dry weight of the above-ground tissues, and the concentration in the above-ground tissues of at least one other metal is achieved,

wherein the plant is cultivated in the soil.

16. (Once Amended) The metal recovery culture [nickel hyperaccumulating plant] of claim 13, wherein the concentration of nickel in the above-ground tissues is at least 2.5% based on the gross dry weight of the above ground tissues.

17. (Once Amended) The metal recovery culture [nickel hyperaccumulating plant] of claim 14, wherein the concentration of nickel in the above-ground tissues is at least 2.5% based on the gross dry weight of the above ground tissues.